

What Works Clearinghouse



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WWC Quick Review of the Article “Technology’s Edge: The Educational Benefits of Computer-Aided Instruction”[†]

What is this study about?

The study examined whether the *I CAN Learn*[®] computer-based curriculum is more effective than traditional classroom instruction at teaching pre-algebra and algebra concepts to middle- and high-school students.

The study included about 1,600 students in 15 high schools and two middle schools in three large urban school districts.

Math classrooms in each school were randomly assigned to use either the *I CAN Learn*[®] program in a school computer lab or the traditional math curriculum in a regular classroom.

Students' math achievement was assessed on a 30-item pre-algebra and algebra test developed for this study and on standardized statewide math tests. The study assessed the program's effectiveness by comparing the test scores of the two instruction groups at the end of the school year.

What is *I CAN Learn*[®]?

Commercially-available computer-based curriculum for delivering pre-algebra and algebra instruction

Students work individually in computer labs with interactive math software programs

Replaces traditional math classroom instruction

Schools pay per-student fees for use of the software, plus any needed computer hardware costs

WWC Rating

The research described in this article is consistent with WWC evidence standards

Strengths: The study is a well-implemented randomized controlled trial.

Cautions: The study's main results rely on a 30-item pre-algebra and algebra test developed for use in this study. The authors do not provide information about how well the test questions measured students' knowledge of the concepts taught. In addition, although 93 percent of classrooms from the original sample were included in the main analysis, less than half (45 percent) of the original students were included. Even so, students from the two instruction groups who were included had similar characteristics before the intervention began.

What did the study authors report?

At the end of the school year, students in classrooms using *I CAN Learn*[®] scored higher on the assessment of pre-algebra and algebra skills than students in traditional math classrooms. The estimated effect size was 0.17, equivalent to moving a student from the 50th to 57th percentile.

In one of the three study districts, students in classrooms using *I CAN Learn*[®] also scored higher on their standardized statewide math test.

[†]Barrow, L., Markman, L., & Rouse, C. E. (2009). Technology's edge: The educational benefits of computer-aided instruction. *American Economic Journal: Economic Policy*, 1(1), 52–74.